More Information

Time Tuesday, May 8, 2001
11:00 am - 12:00 pm

Location 50F-1647 Conference Room

Title A relaxation strategy for inner-outer linear solvers in domain decomposition methods

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Abstract The remarkable robustness of Krylov methods with respect to inexact matrix-vector products is a strong property recently emphasised by Golub, Zhang and Zha (2000), and Bouras and Fraysse (2000). In the context of embedded iterative solvers with an outer Krylov scheme, it is possible to monitor the inner accuracy and relax it when outer convergence proceeds. We extend the relaxing strategy proposed by Bouras and Fraysse (2000) to the context of domain decomposition methods for partial differential equations solved with the Schur complement method. Numerical experiments on an heterogeneous and anisotropic problem show that it is possible to save a significant amount of matrix-vector products when using a tuned relaxing strategy for controlling the accuracy of the local subproblems.

Joint work with Valerie Fraysse and Amina Bouras.

Sponsor Osni Marques